

CLAIMS

I claim:

- 1 1. A seal assembly, comprising:
 - 2 a thermoplastic seal;
 - 3 a preload member adapted to apply a force to and induce cold flow of the thermoplastic
 - 4 seal.
- 1 2. The seal assembly of claim 1, further comprising a ferrule abutting an end of the
- 2 thermoplastic seal.
- 1 3. The seal assembly of claim 1, wherein the ferrule is formed of a metal material.
- 1 4. The seal assembly of claim 1, wherein the thermoplastic seal has a slot formed in an end
- 2 thereof.
- 1 5. The seal assembly of claim 4, further comprising a ferrule having a protruding, tapered
- 2 end abutting the end of the thermoplastic seal.
- 1 6. The seal assembly of claim 1, wherein the preload member is a threaded mandrel.

1 7. The seal assembly of claim 1, further comprising a spring adapted to maintain a force on
2 the thermoplastic seal.

1 8. The seal assembly of claim 1, wherein the thermoplastic seal has a tensile modulus equal
2 to or greater than 500,000 psi at room temperature.

1 9. The seal assembly of claim 1, wherein the thermoplastic seal has a flexural modulus equal
2 to or greater than 500,000 psi at room temperature.

1 10. The seal assembly of claim 1, wherein the thermoplastic seal comprises PEEK.

1 11. The seal assembly of claim 1, wherein the thermoplastic seal comprises PEK.

1 12. The seal assembly of claim 1, wherein the thermoplastic seal comprises PPS.

1 13. The seal assembly of claim 1, wherein the thermoplastic seal comprises PEKEKK.

1 14. The seal assembly of claim 1, wherein the thermoplastic seal comprises PET.

1 15. A method for sealing, comprising:
2 providing a seal having a component formed of a thermoplastic;
3 inducing deformation of the component to create a fluidic seal.

- 1 16. The method of claim 15, further comprising applying a preload to the seal to induce the
- 2 deformation.

- 1 17. The method of claim 15, wherein the deformation comprises cold flow.

- 1 18. The method of claim 15, wherein the deformation comprises crimping.

- 1 19. The method of claim 15, wherein the deformation comprises clamping.

- 1 20. The method of claim 15, further comprising maintaining the preload on the seal.

- 1 21. The method of claim 15, wherein the thermoplastic has a tensile modulus equal to or
- 2 greater than 500,000 psi at room temperature.

- 1 22. The method of claim 15, wherein the thermoplastic has a flexural modulus equal to or
- 2 greater than 500,000 psi at room temperature.

- 1 23. The method of claim 15, wherein the thermoplastic comprises PEEK.

- 1 24. The method of claim 15, wherein the thermoplastic comprises PEK.

- 1 25. The method of claim 15, wherein the thermoplastic comprises PPS.

- 1 26. The method of claim 15, wherein the thermoplastic comprises PEKEKK.
- 1 27. The method of claim 15, wherein the thermoplastic comprises PET.
- 1 28. A seal, comprising:
 - 2 a ferrule; and
 - 3 an adjacent seal member deformed by cold flow about at least a portion of the ferrule.
- 1 29. The seal of claim 28, wherein the seal comprises a thermoplastic.
- 1 30. The seal assembly of claim 29, wherein the thermoplastic has a tensile modulus equal to
 - 2 or greater than 500,000 psi at room temperature.
- 1 31. The seal assembly of claim 29, wherein the thermoplastic has a flexural modulus equal to
 - 2 or greater than 500,000 psi at room temperature.
- 1 32. The seal assembly of claim 29, wherein the thermoplastic comprises PEEK.
- 1 33. The seal assembly of claim 29, wherein the thermoplastic comprises PEK.
- 1 34. The seal assembly of claim 29, wherein the thermoplastic comprises PPS.
- 1 35. The seal assembly of claim 29, wherein the thermoplastic comprises PEKEKK.

1 36. The seal assembly of claim 29, wherein the thermoplastic comprises PET.

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1 37. The seal of claim 28, further comprising a preload member.

1 38. A seal, comprising:

2 a housing;

3 a deformed thermoplastic seal member that provides a fluidic seal against the housing and

4 a component.

1 39. The seal of claim 38, wherein the component is a control line.

1 40. The seal of claim 38, wherein the seal member has a tensile modulus equal to or greater
2 than 500,000 psi at room temperature.

1 41. The seal of claim 38, wherein the seal member has a flexural modulus equal to or greater
2 than 500,000 psi at room temperature.

1 42. The seal of claim 38, wherein the seal member comprises a PEEK material.

1 43. The seal of claim 38, wherein the seal member comprises a PEK material.

1 44. The seal of claim 38, wherein the seal member comprises a PPS material.

1 45. The seal of claim 38, wherein the seal member comprises a PEKEKK material.

1 46. The seal of claim 38, wherein the seal member comprises a PET material.